

Energy & the Environment ENVS/ENGR 119 Spring 2015

Instructor: Dustin Mulvaney, Ph.D., Environmental Studies Department, San José State University

Office hours/location: Tuesday 12–1:30 PM or by appointment, 111C Washington Hall dustin.mulvaney@sjsu.edu

Class days/time/room: Tues/Thurs 7:30–8:45 & 10:30–11:45 AM, Clark 238

Attributes: Area R: Earth & Environment

Prerequisites: Passing the WST ([Links to an external site.](#))

MYSJSU Messaging and Canvas

You are responsible for regularly checking with the messaging system through MySJSU. Course materials such as the syllabus, assignments, readings, and handouts will be found on canvas: <https://sjsu.instructure.com> Log in with your SJSU One account info.

Course Description

In this course you will be introduced to the nexus of social, technical, and environmental challenges to providing sustainable energy supplies and patterns of use. You will learn physical principles underlying power generation, conventional forms of energy and their social and environmental impacts, sources of renewable energy, and means to transition to more sustainable energy sources. The political, economic, cultural, historical, and policy dimensions of energy procurement, generation, and consumption will show how energy issues are entangled in deeper social and environmental contexts. Human civilization cannot continue using energy at our present rate of consumption; we must look for ways to decrease our energy use.

This course is divided into five parts. Part 1 reviews energy generation and consumption patterns and the scientific principles related to energy, heat, and work. Part II of this course explores various sources of energy from conventional forms of energy generation and their social and environmental impacts. Part III focuses on renewables including solar, wind, biomass, wave, tidal, hydroelectric, and geothermal. Part IV centers on questions about making infrastructure more sustainable: food systems, transportation, and buildings. In part V, we will synthesize planning efforts and proposals for making sustainable energy transitions.

Course Goals and Student Learning Objectives

At the end of this course, students should be able to:

- Understand the nexus of energy challenges and relevant economic, social, and environmental issues.
- Describe the physical principles related to the energy, heat, power, and work
- Complete basic calculations / conversions in energy, heat, power, and work
- Describe the scientific properties and spatial distribution of conventional and renewable energy sources

- Analyze the relative energy use in U.S. to other nations, and the forces that shift the mix of energy sources over time
- Describe basic principles to improve efficiency and design of energy delivery, recognize opportunities to reduce energy consumption, and promote sustainability;
- Assess basic economic, government policy, and social equity dimensions of energy options
- Utilize tools to evaluate an energy option and assess alternatives.

Required readings: On the canvas site: or a linked in the syllabus.

ENVS Library Liaison, Peggy Cabrera, peggy.cabrera@sjsu.edu

Classroom Protocol: You are expected to come to every class on time. Classroom participation will be reflected in your final grade. No cell phone, emailing, or text messaging during class. If you need to make a phone call or send an email, please excuse yourself from class.

Dropping and Adding: Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies \(Links to an external site.\)](#) section at <http://info.sjsu.edu/static/catalog/policies.html> (Links to an external site.) Add/drop deadlines can be found on the [current academic calendar \(Links to an external site.\)](#) web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar (Links to an external site.). Students should read the [Late Drop Policy \(Links to an external site.\)](#) and be aware of the current deadlines and penalties for dropping classes.

Assignments: Use these values to to monitor your grade.

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3

at <http://www.sjsu.edu/senate/docs/S12-3.pdf> (Links to an external site.)

20% Participation. Share your thoughts about the readings, ask thoughtful questions, answer discussion prompts. Keeping good notes about the main points or views taken by authors is a good means a facilitating a sustained discussion. You will also be asked to work in small groups now and then in class, and you will be expected to be a contributing member to your group. Stay engaged with **current events** related to energy policy. Bring a news story to the classes' attention **twice** over the semester (before December 1) by (1) posting it to the canvas website and (2) describing the story at the start of class. Prepare a few remarks as we'll want to know more than just the headline. There are many sources of news and information on energy, climate change, and the environment. You may want to set up an RSS feed. New York Times Environment Section; The Guardian of London; San Francisco Chronicle; San Jose Mercury News; Wall Street Journal, etc., all more or less decent websites. You should also prepare a **notebook** with lecture notes and short annotations on the readings. Come to class having completed all of the assigned readings and something important from the reading in your notebooks. Also make sure to bring the assigned readings each class. If you only read the pdf, you should have very detailed notes. Every article we read should be summarizes or noted upon in this notebook. If you take notes in the margins of your readings, make sure to transfer important ones to your notebook. These notebooks may be evaluated to gauge your engagement with the readings and lectures. Most importantly, you can use these notebooks for your exams.

20% Assignments: As part of the activities in this class, you will complete five graded assignments.

20% Midterm: Both the midterm and the final exams will be open notebook. The tests will include short answers and essay questions. However, you will not have access to any electronic devices (other than a calculator). You must bring a calculator to the examinations. To study for the tests, you should review the readings, course lecture notes, homework, and learning objectives well in advance of the test date. The midterm will include material covered during the first portion of the class. We will include both multiple choice and problems related to the scientific principles of energy, heat, and work. You are encouraged to review the problems sets before the midterm.

20% Final Research Paper: Students will individually write a research paper related to renewable or conventional energy technologies. More details on this assignment will be available on the course website.

20% Comprehensive Final Exam: There will be a comprehensive final exam.

Course Grading: The course grade will be determined based on a total 100 possible points. Accumulated points that fall within the grade scale below determine your semester grade.

A+ 97–100	A 92–96	A- 89–91	B+ 86–88	B 81–85	B- 79–80	C+ 76–78
C 72–76	C- 69–71	D+ 67–68	D 64–66	D- 60–64	F < 60	

University policy on academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The [University's Academic Integrity policy \(Links to an external site.\)](http://www.sjsu.edu/senate/S07-2.htm), located at <http://www.sjsu.edu/senate/S07-2.htm>, requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website \(Links to an external site.\)](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

Campus policy in compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the Accessible Education Center to establish a record of their disability.

Other Campus Resources

- **Computer labs** for student use are available in the **Academic Success Center** located on the 1- floor of Clark Hall and on the 2- floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112.

- The **Learning Assistance Resource Center (LARC)** is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to inspire them to become independent learners. The Center's tutors are trained and nationally certified by the College Reading and Learning Association (CRLA). They provide content-based tutoring in many lower division courses (some upper division) as well as writing and study skills assistance. Small group, individual, and drop-in tutoring are available. Please visit [the LARC website \(Links to an external site.\)](#) for more information at <http://www.sjsu.edu/larc/> (Links to an external site.).
- The **SJSU Writing Center** is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The [Writing Center website \(Links to an external site.\)](#) is located at <http://www.sjsu.edu/writingcenter/about/staff/> (Links to an external site.).
- The **Peer Mentor Center** is located on the 1- floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering “roadside assistance” to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are free and available on a drop –in basis, no reservation required. The [Peer Mentor Center website \(Links to an external site.\)](#) is located at <http://www.sjsu.edu/muse/peermentor/>

Course schedule

Course schedule

1/22 - First day of instruction

Introduction to the challenges and dilemmas related to energy & the environment

Syllabus overview

Slides: [energy overview I-1.pdf](#)  


1/27 - Energy, Society, and the Environment

Read: Smil, 2010, Science, Energy, Ethics, & Civilization. [Smil 2010 science-energy-ethics-civilization.pdf](#)

Read: Smil, 2006, Energy [Smil 2006 Energy.pdf](#)

Q. *What are the key shifts in the evolution of energy use?*

Keywords & concepts: Energy use patterns in historical perspective, impacts of energy, energy v. power, stationary and mobile prime movers, energy conversions, primary energy supplies, mechanical, thermal, chemical, solar, nuclear, electrical

Slides: [2 energy overview II.pdf](#)  

1/29 - Energy Science Fundamentals

Read: Wolfson 2012. Chapter 3, Forms of Energy, Electricity, 35-44 [Wolfson chapter 3 Energy a closer look.pdf](#)

Q. *What are the differences between forces and energy? What are the key forms of energy? How is electricity made?*

Keywords & concepts: Energy Density, Entropy, Stocks and Flows, Intergenerational Equity, thermodynamic laws; Energy units; efficiency

Slides: [3 energy overview III.pdf](#)

2/3 - Energy Science Fundamentals

Read: Wolfson 2012 Chapter 3, Quantifying Energy, Energy and Work [Wolfson chapter 3 Energy a closer look.pdf](#)

Q. *What units do we use to measure power and energy? How are basic unit conversions calculated?*

Read: McKibben, B. 2012. "Global Warming's Terrifying New Math." *Rolling Stone*. July 24, 2012. [McKibben 2012 Global Warming's Terrifying New Math.pdf](#)

Q. *What are the three numbers to know about climate change and what do they represent?*

Keywords & concepts: Energy use in transportation, Kinetic and Gravitational Potential Energy, Forces, Electricity, Electro-magnetic induction

Slides: [energy transformations.pdf](#) [energy use 2009 & 2012.pdf](#) [4 electricity.pdf](#)

2/5 - Coal

Read: Goodell, 2007. The Saudi Arabia of Coal. *Big Coal: The Dirty Secret Behind America's Energy Future*. NY: Mariner Books, 3-20. [Goodell 2007 Saudi Arabia of coal.pdf](#)

Q. *Where is the Saudi Arabia of coal and how much does it supply to the USA?*

Keywords & concepts: Coal: regions, uses, sources, formation, Carboniferous period, labor hazards

Slides: [9 coal.pdf](#)

2/10 - Coal

Read: Watts, J. 2009. The two faces of China's giant coal industry. <http://www.theguardian.com/environment/2009/nov/15/china-coal-industry-mongolia-shaanxi>

Q. *Why will China's demand for coal affect the US coal industry? How will coal-to-liquids impact GHG emissions from transportation?*

Keywords & concepts: China, export terminals, coal-to-liquids, syngas, clean coal, CCS.

Slides: [9 coal.pdf](#)

2/12 - Natural gas

Mooney, 2011. The Truth About Fracking *Scientific American* 80–5 [Mooney 2011 Fracking.pdf](#)

Q. What are the key scientific debates around fracking? What do we know and not know?

Keywords & concepts: natural gas production, horizontal slant drilling, hydraulic fracturing, shale, water impacts, risks to drinking water

2/17 - Natural gas

Read: Smil, V. 2012. Placing American gas boom in perspective. *The American* May 3, 2012. [Smil 2012 American gas boom.pdf](#)

Q. What are the claims and counter-claims about the American gas boom?

Keywords & concepts: politics of reserve estimates, Marcellus Shale

2/19 - Natural gas

Assignment #2 due in class, paper copy

Read: Thompson. 2012. [Fracking boom spurs environmental audit. Nature 485.](#)

Q. What are the public health risks from fracking?

Keywords & concepts: water impacts, the watershed view, Energy Policy Act of 2005 (Halliburton loophole)

SLIDES: [natural gas maps and graphs.pdf](#)

Optional: Gasland.

<https://www.youtube.com/watch?v=6mp4ELXKv-w>

2/24 - Petroleum & energy for transportation

Read: Smil, 2011. America's oil imports: A self-inflicted burden. *Annals of the Association of American Geographers* 101:1-4. [Smil 2011 Oil.pdf](#)

Q. What are the factors that drive America's excessive consumption of petroleum?

Read: Isaacson. 2012. [Lessons from Air Pollution Past.](#) *Sage Magazine.*

Q. How has public policy helped improve air quality?

Read: Papadakis. 2012. Arctic National Wildlife Refuge. In Mulvaney. *Green Energy: An A-to-Z Guide* Sage. <http://knowledge.sagepub.com.libaccess.sjlibrary.org/view/greenenergy/n4.xml>

Q. What is the ecological significance of ANWR?

SLIDES: [5 oil transportation air pollution smog ANWR.pdf](#)

Keywords & concepts: Oil & petroleum consumption & production trends, oil impacts, ANWR, unit: tons of oil equivalent, air pollution & photochemical smog from combustion

Additional, optional information

Gulf Spill Map: <http://ngm.nationalgeographic.com/2010/10/gulf-oil-spill/gulf-map-interactive>

2-26 - Shale oil & tar sands

Read: Horwitz. 2014. Dark side of the boom: http://www.washingtonpost.com/sf/national/2014/09/28/dark-side-of-the-boom/?Post+generic=%3Ftid%3Dsm_twitter_washingtonpost

Q. *What are some of the challenges facing oil boom towns?*

Read: McDonnell. 2012. "There's no hiding from tar sands." Mother Jones. <http://www.motherjones.com/environment/2011/12/theres-no-hiding-tar-sands-oil>

Q. *Why is there no hiding from tar sands?*

Keywords & concepts: Tar Sands, Synfuels, Bitumen, dilbit, Keystone XL pipeline Carbon intensity, emissions factors

SLIDES: [6 syn fuel tar sands.pdf](#)

Optional

Shifting Sands, review site: <http://v1.theglobeandmail.com/v5/content/features/oilsands/index.html>

Sierra Club video: <http://www.rollingstone.com/politics/news/why-tar-sands-oil-isnt-worth-the-trouble-20120618>

tarsands:

<http://www.youtube.com/watch?v=61X4IQqnd0>

The Atlantic on the Alberta Oil Sands: <http://www.theatlantic.com/infocus/2014/09/the-alberta-tar-sands/100820/>

Fracking

<https://www.youtube.com/watch?v=Uti2niW2BRA&feature=youtu.be>

3/3 - EVs & Hydrogen

Read: Casalenuovo, K. "Electric Vehicle." In Mulvaney 2011. *Green Energy: An A-to-Z Guide*. SAGE Publications. <http://knowledge.sagepub.com.libaccess.sjlibrary.org/view/greenenergy/n34.xml>

Q. *What are the primary obstacles to widespread EV adoption?*

Read: Isherwood, W. "Hydrogen." In Mulvaney 2011. *Green Energy: An A-to-Z Guide*. SAGE Publications. <http://knowledge.sagepub.com.libaccess.sjlibrary.org/view/greenenergy/n74.xml>

Q. *Depending on the feedstock for making hydrogen fuel, it could have substantial benefits or very limited benefits if at all. What are the primary challenges to making hydrogen fuel sustainable?*

[Slide battery cost reduction forecast.pdf](#) [7 + 8 sustainable transportation EVs H2 CH4.pdf](#)

2014 Tesla Battery Report: <http://advancedautobat.com/industry-reports/2014-Tesla-report/index.html>


Keywords & concepts: Sustainable Transportation, lithium, hydrogen, battery energy density, obstacles to EVs

3/5 - Carbon Footprint

Assignment 3 Due: Part 1 & 2 before class, Part three by midnight.

Walser, et al. 2012. Carbon Footprint. Encyclopedia of Earth. http://www.eoearth.org/article/Carbon_footprint

Jessica Grady-Bensona and Brinda Sarathyb. 2015. Fossil fuel divestment in US higher education: student-led organising for climate justice. *Local Environment* [PDF](#)

 <http://dx.doi.org/10.1080/13549839.2015.1009825>

Keywords & concepts: Carbon Emissions Factor, divestment movement

3/10 - Nuclear Power

Read: Perrow, C. 2013. Nuclear Denial: From Hiroshima to Fukushima. *Bulletin of the Atomic Scientists*. 65(5) [Perrow.pdf](#)

Q. What is being denied?

Read: Cockburn, A. 2011. In Fukushima's Wake: How the Greens Learned to Love Nuclear Power. *New Left Review* 68:75–79. [cockburn NLR 2011.pdf](#)

Q. Why do the greens love nuclear power? What are the consequences of their support for nuclear?

Keywords & concepts: Sources of nuclear power, nuclear waste, low level radiation, yellow cake, Uranium 235/U238.

3/12 - Nuclear Power

Read: Boudes, P. “Nuclear Power” In Mulvaney 2011. *Green Energy: An A-to-Z Guide*. SAGE Publications. <http://knowledge.sagepub.com.libaccess.sjlibrary.org/view/greenenergy/n92.xml>

SLIDES: [nuclear power](#)

OPTIONAL: Explained: rad, rem, sieverts, becquerels <http://web.mit.edu/newsoffice/2011/explained-radioactivity-0328.html>

OPTIONAL:

http://www.ted.com/talks/taylor_wilson_my_radical_plan_for_small_nuclear_fission_reactors.html

Keywords & concepts: Yucca Mountain, passive design

3/17 - Hydro-Power

Phadke, R. "Hydro-Electric Power." In Mulvaney 2011. *Green Energy: An A-to-Z Guide*. SAGE Publications. <http://knowledge.sagepub.com.libaccess.sjlibrary.org/view/greenenergy/n73.xml>
(Links to an external site.)

SLIDES: [16 hydropower part 1.pdf](#)

Keywords & concepts: Hydro-electric Power

3/19 - Midterm

Open notebook; bring a calculator!

3/31 - Wind

Randolph & Masters Chapter 12 [randolph masters ch 12 wind.pdf](#)

Keywords & concepts: Wind Power Basics, Power potential

4/2 - Wind

Phadke, R. 2013. Public Deliberation and the Geographies of Wind Justice. *Science as Culture* 22(2): 247–255. [Phadke 2013.pdf](#)

Optional, cool map: <http://eerscmap.usgs.gov/windfarm/> (Links to an external site.)

Keywords & concepts: Wind Power, siting challenges, ecological compatibility, the social gap in renewable energy

SLIDES: [17 + 18 wind.pdf](#)

4/7 - Solar

Randolph & Masters Chapter 7, 11 [randolph masters CH 11.pdf](#)

[randolph masters CH 7.pdf](#)

Keywords & concepts:

SLIDES: [19 solar.pdf](#)

Solar Photovoltaic (PV) Energy

Solar Thermal Energy

4/9 - Life Cycle Assessment EROI

Kreith, bang for the buck

[Article - EROI.pdf](#)

Keywords & concepts: Life Cycle Analysis, EROI, EPBT for PV and Wind

SLIDES: [20 LCA .pdf](#)

4/14 - Energy crops

OPTIONAL: Borjesson & Tufvesson. 2011. Agricultural crop-based biofuels – resource efficiency and environmental performance including direct land use changes. *Journal of Cleaner Production* 19: 108–20.

<http://libaccess.sjlibrary.org/login?url=http://dx.doi.org/10.1016/j.jclepro.2010.01.001> (Links to an external site.) [PDF here](#)

Keywords & concepts: Bioenergy, First Generation Crops

4/16 - Biofuels

Dominguez-Faus, R., et al. 2009. "The water footprint of biofuels: A drink or drive issue?" *Environmental Science & Technology* 43(9): 3005–10.

<http://libaccess.sjlibrary.org/login?url=http://dx.doi.org/10.1021/es802162x> (Links to an external site.) [PDF here](#)

Keywords & concepts: Second, Third Generation & Water

SLIDES: [21 + 22 bioenergy.pdf](#)

4/23 - Geothermal

(1) National Renewable Energy Lab <http://www.nrel.gov/docs/fy00osti/28204.pdf> (Links to an external site.)

(2) Randolph & Masters, Geothermal heat pumps [randolph geothermal heat pump.pdf](#)

(3) LA Times article on [Geothermal.pdf](#)

OPTIONAL tool to explore: http://maps.nrel.gov/gt_prospector (Links to an external site.)

Keywords & concepts: Geothermal Energy

SLIDES: [23 geothermal.pdf](#)

4/28 - Wave and Tidal Resources

Mohammad-Reza Alam. 2011. Wave Energy. Technology Avenue. [mohammed reza.pdf](#)

Keywords & concepts: Wave and Tidal Resources

SLIDES: [24 wave and tidal.pdf](#)

4/30 - Agri-food systems & energy

Pelletier et al. 2011. Energy Intensity of Agriculture and Food Systems. *Annual Review of Environment Resources* 36: 223–46.

<http://libaccess.sjlibrary.org/login?url=http://dx.doi.org/10.1146/annurev-environ-081710-161014>. (Links to an external site.)[pdf](#) (Links to an external site.)

[PDF](#) of Pelletier

Keywords & concepts: Uses of energy in food production

SLIDES: [25 food.pdf](#)

5/5

Discuss research topics in class

Green Ninja survey and extra credit [Green Ninja_ENVS119_2014.docx](#)

Keywords & concepts: Energy use & conservation

SLIDES: [26 Energy Efficiency.pdf](#)

5/7 - Energy & water

(1) McMahon & Price. 2011 Water & Energy Interactions. *Annual Review of Environment Resources* 36:163–91

<http://libaccess.sjlibrary.org/login?url=http://dx.doi.org/10.1146/annurev-environ-061110-103827> (Links to an external site.)

[McMahon & Price.pdf](#) (Links to an external site.)

Keywords & concepts: Uses of water in energy production

5/12 - Decarbonization strategies

Pacala and Sokolow 2004 [Science-2004-Pacala Sokolow.pdf](#)

[Behavioral Wedge.pdf](#)

Decarbonization Strategies

Keywords & concepts:

TBA FINAL EXAM

Links for Energy News

At the start of almost every class, I will ask if there is anything interesting about energy in the news. Twice over the semester you are required to summarize a new story for the class. You can chime in with news more than that as well. Consider exploring whether there is any news germane to the day's lecture topic.

- [Energy and Environment News](#) (Links to an external site.) → SJSU pays a subscription for this service, so consider utilizing it.
- [Grist](#) (Links to an external site.)
- [Mother Jones](#) (Links to an external site.)
- [Greentech media](#) (Links to an external site.) →
- [Clean Technica](#) (Links to an external site.)
- [Wall Street Journal - Energy](#) (Links to an external site.)
- [Forbes](#) (Links to an external site.) →
- [Dot Earth](#) (Links to an external site.) → Andrew Revkin is a leading journalist on climate and energy issues.
- [Think Progress](#) (Links to an external site.) → or [Climate Progress](#) (Links to an external site.) Joe Romm is a well known energy and climate researcher.

- [NYT Energy Environment](#) (Links to an external site.) ↗
- [Yahoo Energy News](#) (Links to an external site.) ↗
- [Green Energy News](#) (Links to an external site.) ↗
- [Renewable Energy World](#) (Links to an external site.) ↗
- [The Oil Drum](#) (Links to an external site.) ↗
- [Energy Bulletin](#) (Links to an external site.) ↗
- [Solar Novus Today](#) (Links to an external site.)
- [Earth Techling](#) (Links to an external site.)

Resources

- [Gulf of Mexico Oil Spill](http://ngm.nationalgeographic.com/2010/10/gulf-oil-spill/gulf-map-interactive) <http://ngm.nationalgeographic.com/2010/10/gulf-oil-spill/gulf-map-interactive> (Links to an external site.)
- <http://www.eoearth.org/oceanoil> (Links to an external site.)
- ProPublica's series on fracking <http://www.propublica.org/series/fracking> (Links to an external site.)
- I love mountains <http://ilovemountains.org/>
- <http://www.storyofstuff.org/movies-all/story-of-cap-trade/> (Links to an external site.)
- PBS/Frontline has a 50 minute video online broken up in five segments <http://video.pbs.org/video/1625293496> (Links to an external site.)

National Geographic has a long and very good piece about it, available on YouTube <http://www.youtube.com/watch?v=cZH5byNzHV8> (Links to an external site.)



BBC's "Horizon" about the efforts to cap the well-head <http://www.bbc.co.uk/programmes/b00w5qs8> (Links to an external site.)

There was an NSF-funded project including short, interactive segments that are used in classrooms. www.afterthecap.org (Links to an external site.)

There is a TED talk by Naomi Klein for this topic. She talks about the blowout and the Alberta Tar Sands and geoengineering as evidence we are "addicted to risk." It has the downside of confusing Beck's definition with the common ideas of taking a risk, but the video is useful to demonstrate other sociological concepts, like the treadmill and ideologies, as well. A transcript of the talk is also available.

<http://www.youtube.com/watch?v=0ZHL7P7w3as> (Links to an external site.)



Out of Sight, Out of Mind: The Dispersant Experiment, A short documentary by Red Bridge Productions: https://www.youtube.com/watch?feature=player_embedded&v=aO6Xvzbl_zg (Links to



[an external site.](#))

The BP oil spill made international headlines two summers ago as images of stained beaches and oil-soaked pelicans portrayed what might have been the greatest ecological disaster in our nation's history. Along with their massive PR efforts, British Petroleum had another method of keeping the spill from sinking their business - the chemical dispersant Corexit. Over two million gallons were sprayed and injected into the Gulf of Mexico and so began the great experiment...

After six months of filming in the Gulf in 2010, our first project, "Out of Sight, Out of Mind: The Dispersant Experiment" draws from local residents, a variety of experts, and an in-depth lab experiment to expose the truth about BP's cleanup. Please help share our piece as we aim to spread this truth and combat the multi-million dollar PR campaign that claims all is well. As legal battles continue to play out, it is not too late to bring justice to the people of the Gulf.

There Will Be Blame – Daily Show segment on shifting the blame and attempts to cap the gusher. <http://www.thedailyshow.com/watch/thu-may-13-2010/there-will-be-blame> (Links to an external site.)